HYDAC INTERNATIONAL

Digital camera
HVT 1100

Ethernet interface
ISO17215

Features

- Top quality and reliability due to the use of automotive components (image sensor and image processor)
- Large selection of optics, suitable for the application
- Possibility to integrate customer- and application-specific overlays into the image
- High level of robustness
- Customer-specific adaptations possible, i.e. for connector, mount, etc.

Description

HVT 1100 is a digital camera that has been specially developed for the field-of-view extension and process monitoring in mobile machines.

The camera features a compact, rugged housing and is suited for a wide range of applications thanks to the large variance of available fields of view.

The HVT 1100 is equipped with a 1.3 MP image sensor with HDR function (typical output format: 1280 x 960 pixels). Hence, even under demanding environmental conditions (e.g. twilight or backlight), the camera delivers a high-quality image.

Thanks to the Ethernet interface (100BASE-TX / Industrial Ethernet or 100BASE-T1 / BroadR-Reach), the camera can be easily integrated into modern machine architectures. The power supply can be provided by a 12 V or 24 V on-board system.

An extensive software library is available for configuration of the camera. The HVT 1100 is compatible with the most current generation displays and HMIs with Ethernet and / or BroadR-Reach interface among others.
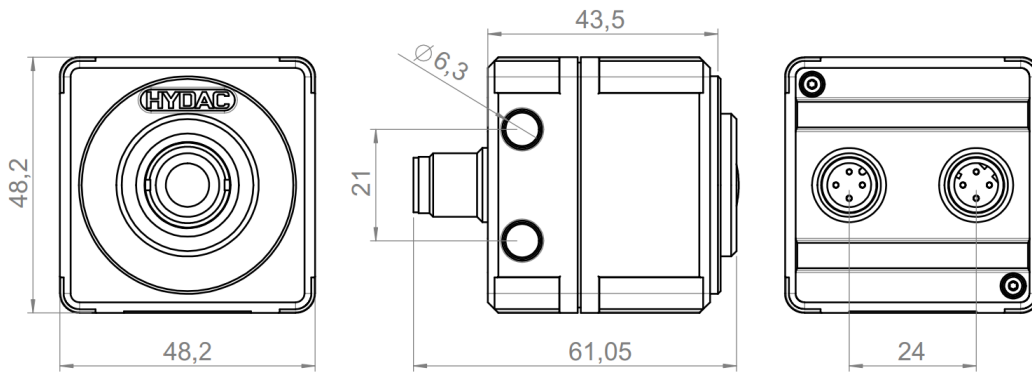
Application fields

The HVT 1100 camera series is suitable for the below mentioned application fields:

- Agricultural machines
- Construction machinery
- Municipal machines
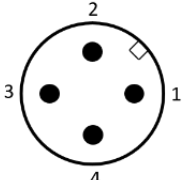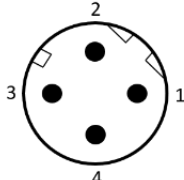- Special machinery
- Transport and logistics

Technical Data

Field of view and image display					
Horizontal field of view	30°	60°	90°	120°	180°
Image sensor	Automotive CMOS colour sensor AEC-Q100 Grade 2 3.0 µm Back-Side-Illuminated Pixel Rolling-Shutter (RS) Integrated automotive qualified image processor				
Resolution	Among others: 1280 x 960 (factory settings) – 320 x 240 (aspect ratio 4:3), 1280 x 800 – 320 x 200 (aspect ratio 16:10)				
Band width	4 .. 85 Mbit/s				
Image rate	30 fps (factory settings)				
Dynamic range	HDR (factory settings)				
3A functions	Aktiv (factory settings)				
Additional functions	Such as: Distortion correction (dewarping) inside the camera Mode for LED Flicker suppression Application and customer-specific overlay option Unicast-, Multicast-, Broadcast-Mode Switchable heating inside the camera				

Data transmission	
Transmission standard	100Base-TX (Fast-Ethernet, 100 Mbit/s) or 100Base-T1 (BroadR-Reach, 100 Mbit/s), depending on the version
Protocol for video transmission	UDP / RTP (factory settings) or AVB
Configuration standard acc. to ISO 17215 (VCIC / SOME/IP)	Among others: IP-Address Streaming-Ports Resolution / image rate
Image compression	Choice between MJPEG or h.264
Electrical connection for data transmission	M12 D-coded, connector plug

Environmental Conditions / Approvals / Tests	
Operating temperature range	-40 .. +85 °C
Storage temperature range	-40 .. +85°C
Vibration resistance acc. to ISO 16750-3	58.5 m/s² r.m.s.
Shock resistance acc. to DIN EN 60068-2-27	30 g / 18 ms
UV resistance acc. to ISO 4892-2, Method A	Standard
Corrosion resistance acc. to IEC 60068-2-52	Standard
EMC	DIN EN ISO 14982-1
CE Conformity	Standard
UKCA Conformity	Standard
E₁ approval	In process
Protection type acc. to DIN EN 60529[1]	IP 67, IP 6K9K

Other data	
Electrical connection for supply voltage	M12 A-coded, connector plug
Supply voltage	7 .. 32 V DC
Power consumption	< 1 W (heating off) < 7 W (heating on)
Dimensions	49 x 49 x 61 mm
Weight	~ 150 g

Note: [1] With mounted mating connector in corresponding protection type
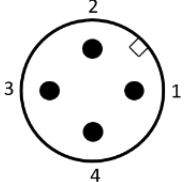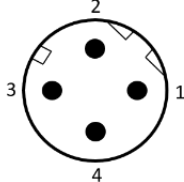
HYDAC

Device dimensions

Pin connections

For variants with model code HVT 11xx – **F52** – 2 – xxxx – 000 (100Base-TX, Industrial Ethernet):

M12x1, 4 pole for supply	Pin	A-coded	M12x1, 4 pole for data transmission	Pin	D-coded Industrial Ethernet (100Base-TX)
	1	+ U_B		1	Tx +
	2	n.c.		2	Rx +
	3	GND -		3	Tx -
	4	n.c.		4	Rx -

For variants with model code HVT 11xx – **F53** – 2 – xxxx – 000 (100Base-T1, BroadR-Reach):

M12x1, 4 pole for supply	Pin	A-coded	M12x1, 4 pole for data transmission	Pin	D-coded BroadR-Reach (100Base-T1)
	1	+ U_B		1	Tx / Rx
	2	n.c.		2	n.c.
	3	GND -		3	Tx / Rx
	4	n.c.		4	n.c.

Model code

<div align="right">

HVT 1 1 X a - F 5 X - 2 - 6 E 6 A - 000

</div>

Resolution
1 = 1.3 MP

Horizontal field of view
C = 30°
F = 60°
I = 90°
L = 120°
R = 180°

Technical characteristics of the lens
A = Standard

Interface
F5 = Ethernet-based

Ethernet Physical Layer
2 = 100Base-TX (Industrial Ethernet)
3 = 100Base-T1 (BroadR-Reach)

Band width as exponent
2 = 10^2 = 100 Mbit/s

Connector for data transmission [1]
6D = M12x1, 4-pol., D-coded, connector plug

Connector for power supply [1]
6A = M12x1, 4-pol., A-coded, connector plug

Modification Number
000 = Standard

Note:
[1] Other models on request

Accessories:
Appropriate accessories, such as mounting brackets, can be found in the acessories brochure.

Note

The information in this brochure relates to the operating conditions and applications described.
For applications or operating conditions not described, please contact the relevant technical department.
Subject to technical modifications.